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## Rational Expectations as a Counterrevolution

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If there is a crisis in economic theory, it is a crisis in Keynesian economic theory. Most economists, even the Keynesians, seem to agree that there are at least some defects in this theory, although they may disagree passionately about what those defects are and how they should be remedied. Until the early 1970s, the economists who opposed the Keynesians had to be content with pulling a few fish off of their opponents' hooks. But when the theory of rational expectations began to be developed, these economists found that they could simply dynamite all the fish in the lake. While this may be unsportsman-like, it does demonstrate an admirable grasp of fundamentals. Today, to continue the metaphor, a fleet of stunned Keynesians is quibbling about which of their few remaining fish are still flopping.

I know how they feel, for I once believed in conventional, Keynesian theory and the economic models based on it. Now, however, I am persuaded that this theory is fundamentally wrong, so wrong that it can never yield models valid for evaluating policy. Although rational expectations theory is still in its infancy, it has already devastated conventional theory and appears to offer a promising alternative to it.

In the beginning: classical economics. Rational expectations can be understood as an attempt to apply the principles of classical economics to all economic problems and specifically to macroeconomic policy. Although the basic classical premise has long been agreed upon by nearly all economists, it has never before been seriously applied to macroeconomic policymaking. Rational expectations, then, is a new classical economics.

Classical economics, which dominated economic method in the first part of this century, is built upon two key premises. The basic one, seldom disputed, is that individuals optimize. In other words, the model's economic agents--both firms and

individuals--seek maximum expected profits or maximum expected utility, within the limitations of their incomes and technologies. The second key premise of classical economics, somewhat more controversial, is that markets clear. That is, in each market the amount willingly offered equals the amount willingly bought at a particular price unless legal strictures, discrepancies in information, or government policies prevent it. Equilibrium to a classical economist means that these two premises hold. Equilibrium in each product market means that, at existing prices, the quantities firms want to sell exactly match the quantities consumers want to buy. In labor markets, similarly, at existing wage rates, workers offer as many hours of labor as they want to offer, while firms receive as much labor as they want to hire. Though simple, the classical premises proved remarkably rich for building theory.

All of the early classical models, however, had an important failing. They implied that resources would always be fully employed, that there would never be shortages or unemployment. This failing became obvious during the Great Depression, when millions of people who wanted to work couldn't find jobs and the labor market apparently was not clearing. The classical models of the 1930s could give no explanation for this deep and prolonged depression. They couldn't even account for the existence of ordinary business cycles.

Today, economists have two alternative ways of dealing with this early crisis in economics--they can reject classical premises as the Keynesians have done, or they can seek more coherent and sophisticated versions of the classical premises as the rational expectations school has done.

The Keynesian revolution. To meet this crisis in economics, John Maynard Keynes deliberately rejected the classical premises about the behavior of individuals and markets. In their place he put premises about the behavior of aggregates, such as the general price level and total unemployment. With these new premises, he was able to build a model of an economy in which involuntary unemployment appeared--an economy with a persistent disequilibrium in the labor market.

Keynes' method of aggregate-level, disequilibrium modelling is the foundation of macroeconomics, the branch of economics that has dictated economic policy since the New Deal. The classical method of individual-level, equilibrium modelling has been relegated exclusively to microeconomics, where it has had small opportunity to influence macroeconomic policy. It is odd that these two branches of economics should be based on incompatible theories and even odder that Keynesians should accept classical theories for microeconomics but not for macroeconomics, but that is the case today.

Although many outstanding economists have continued to work with the classical method, the Keynesian method has prevailed since the 1930s not only for policymaking but for economic modelling. Even the monetarist school, which has perceptively criticized macroeconomic policies, uses aggregate-level premises for its models, just like the Keynesian school. Moreover, virtually all of the large-scale macroeconomic models that businesses and governments use for planning, forecasting, and decision making are, at root, Keynesian.

With the help of these models, economists once hoped to improve policy-making. In the early 1960s, when rapid advances in computer technology made highly detailed models possible, many economists--I for one--believed that the government could control business cycles by manipulating fiscal and monetary policies. We didn't question whether government could accomplish this. We only wondered how to do it most effectively. We asked, for instance, if monetary or fiscal policy produced the most economic growth; we asked how long it took for policy actions to have their effects. Despite these questions, though, we had faith that we could do almost magical things once we properly modelled the economy's major relationships.

We believed that a model could be made to simulate the results of whatever policies we were considering. In this way, we could see in advance what our policies would do to the unemployment rate, the price level, or any other variable in the model. Having a perfected model was like having a crystal ball. We could look into it to see the consequences of our policies--or so we thought.

We also believed that we could generate a mathematical rule to tell us how to change policy in response to new information. To do this, we would have to spell out precisely what we were trying to achieve with the variables in the model. We'd have to decide, for example, how much more inflation we would accept in return for a bit lower unemployment. With such decisions made, though, we believed that we could turn an economic model into an effective policymaker and that then many of our economic worries would vanish like an egg in a magician's hat.

Such prospects, however naive, motivated a great deal of research to develop economic models for policymaking. For example, the Federal Reserve Board of Governors during 1966 and 1967 cosponsored the development of a large model, the FRB-MIT model, that was designed to be useful for monetary policymaking. Universities and private concerns developed other large models of at least a hundred equations representing aggregate behavior for a dozen or more sectors. These models were quickly put to work making forecasts and predicting how the economy would respond to alternative policies.

The failure of Keynesian models. These economic models flatly failed. As recently as the early 1970s, they uniformly predicted that the United States could push its unemployment rate down to 4 percent if it accepted an inflation rate of about 4 percent. If it accepted a slightly higher inflation rate, according to these models, it could reduce unemployment still further, and with a 5 or 6 percent rate of inflation, it could practically consign unemployment to the history books. Clearly, these predictions were far off the mark. Unemployment did not drop when inflation went up--it went up too. For the last few years, in fact, unemployment and inflation rates have averaged close to 7 or 8 percent.

These mistaken predictions were based on the assumption that there is an exploitable trade-off between inflation and unemployment, a trade-off that is often represented graphically as the Phillips curve. An exploitable trade-off implies that unemployment can be lowered at any time simply by creating a little more inflation, and

that high unemployment coinciding with high inflation is an extremely unlikely event. As the crisis in classical economic theory was that it could not explain the vast unemployment of the Depression, the crisis in Keynesian economic theory is that it cannot explain the debilitating concurrence of high unemployment and high inflation in the 1970s. Keynesian theory by itself provides no explanation for why inflation and unemployment have been rising together.

Even before the rational expectations school developed, economists were beginning to question the foundations of the Keynesian theory, especially its presumption that there is a stable trade-off between inflation and unemployment. In a volume edited by Edmund Phelps in 1969, for example, several economists, recognizing that Keynesian method does not adequately represent individual behavior, tried to construct theories of unemployment and inflation based not on aggregate-level assumptions, but on individual-level assumptions. Again, in 1973, just as the rational expectations school was making its early breakthroughs, Sir John Hicks delivered a series of lectures on The Crisis in Keynesian Economics that identified many of the failings of conventional theory.

The rational expectations school, then, is not the only one to see the weaknesses in conventional Keynesian theory, but its criticism of the theory is probably the most basic. According to the rational expectations school, Keynesian method and theory are full of irreparable errors.

Error #1: irrational expectations. The rational expectations school has demonstrated that all existing macroeconomic models are useless for policy evaluation, because the method used to construct them dooms them to produce forecasts that are incorrect when policy changes.

Any macro model is essentially a group of equations that represent how some aggregate measures are related to one another. Some of these equations, in effect, specify which information agents use to make their decisions about production, employment, or consumption. In any reasonable model, the agents consider information about

the future, since they presumably make some decisions based on their expectations of the future. Their expectations of future prices, interest rates, and incomes, for instance, influence their current decisions to save or consume.

Although almost everyone agrees that a model must represent expectations about the future, building a model that represents them is tough. Macro model builders have generally given their agents adaptive expectations. Agents who have adaptive expectations expect the future to be essentially a continuation of the past. They expect the future value of any variable in the model--prices, incomes, or anything else--to be an average of its past values and to change very slowly. The average is weighted so that the most recent past is more important than the more distant past, but it is always based entirely on the past. The model consequently has no way of formulating expectations for a future that is substantially different from the past.

This kind of expectations makes sense only if the relationships among the past values and the future values of aggregate variables are fixed. It makes sense, that is, only if agents can reasonably base their expectations exclusively on historical data. But the assumption that these aggregate relationships change very little and the related assumption that agents expect them to change very little can produce ludicrous forecasts when policy changes. If Washington doubled the money supply, eliminated the income tax, and named the Ayatollah Khomeini to the Supreme Court, agents in the adaptive expectations scheme would expect very little change in the economy. Even if Washington changed policy in less extreme ways, such as by passing a windfall profits tax, these agents would expect much too little change in the economy. Adaptive expectations thus amounts to irrational expectations.

If economic agents optimize, as most economists agree, they cannot be this irrational. Irrationality is unnecessarily expensive--it is more expensive than using the available information efficiently. If agents overlook a series of policies that will obviously increase the price level, they are bypassing large opportunities for economic

gain. Workers who overlook such policies, for instance, are signing contracts for slowly rising wages, although foreseeable increases in the price level will quickly erode their buying power. Speculators, likewise, are failing to buy low and sell high, simply because they are ignoring pertinent and readily available information. Irrationality, in short, is not optimizing behavior.

Obviously, agents wouldn't throw their money away willingly. So the economists who defend adaptive expectations claim that agents can be tricked into making wrong decisions by a change of policy. Perhaps they don't foresee that a policy change is coming, or perhaps they don't understand what its effects will be. It is possible that all these people could be tricked like this once or that some of them could be tricked repeatedly. But it is not very likely that everyone in the economy, on average, could be bamboozled again and again by the same old macroeconomic policies, because they would soon learn what these policies do. As Herbert Stein has said, "The lady in the box cannot be fooled by the illusionist who pretends to saw her in half." If people behave this way, they are not optimizing--not seeking the things they want. In this case, they should be studied not by economists but by psychiatrists.

Rational expectations: the technical procedure. The brilliant insight of rational expectations is that the equation that best represents agents' expectations is not something as irrational as a weighted average, but is rather the entire model. Agents, this implies, don't know exactly what a particular variable--say, the future price level--will be, but they make the best possible predictions with the information at their disposal. Although they may make mistakes, they don't throw out pertinent information.

With the rational expectations scheme replacing the adaptive expectations scheme, agents in the model take policy changes into account. If a change in policy creates opportunities to make extraordinary profits, they do not ignore them as they do under adaptive expectations. In a rational expectations model of the economy, agents change their decisions to take full advantage of whatever opportunities are produced by a new policy.

It is already possible to impose rational expectations on simple conventional macro models. Simply imposing rational expectations on these models shows how much their forecasts depend on their assumptions about expectations, although it doesn't correct all of their problems. Under the assumption of rational expectations, these models give much different predictions for the effect of a policy change. In a Keynesian model with adaptive expectations, activist policy such as increasing the money supply generally lowers unemployment and raises output, although it also increases inflation somewhat. But in a similar model with rational expectations, activist policy has no effect on unemployment or real output. It merely boosts inflation. Similarly, in the St. Louis model, a seven-equation monetarist model, monetary expansion normally lowers the unemployment rate over several quarters with only a gradual pickup in the rate of inflation. But after rational expectations is imposed, the trade-off predicted by the model nearly vanishes: Monetary expansion now reduces the unemployment rate only slightly, but quickly pushes the inflation rate into the stratosphere.

Such demonstrations show that policymakers cannot be confident about the forecasts of conventional models unless they are confident that these models accurately portray expectations--which they don't. This may seem self-evident, but it is truly a devastating conclusion. It means that hundreds of laws and thousands of dissertations, books, and articles--including some of my own--have been pointless. It means that all the macroeconomic models that businesses and governments rely on for their economic planning are useless except in the narrowest of circumstances. And that's the good news for the Keynesians.

There are even deeper problems with conventional macroeconomic modelling. The Keynesian approach to macro modelling is wrong not just because it muffs expectations. It is fundamentally incapable of providing models valid for policy evaluation, first, because it is inherently inconsistent and, second, because it depends on arbitrary measures of policy success.



Error #2: inconsistency. Conventional modelling is inconsistent because its premises about aggregate behavior are based on conflicting assumptions about individual behavior. In conventional models, the main equations, which represent aggregate functions like consumption and labor supply, are based only indirectly on individual behavior. For one aggregate function the models may assume that agents make their decisions based only on the current period--that they don't consider future income, future taxes, or future price increases. For another function, though, they may assume that agents plan ahead almost infinitely--that they are much more farsighted.

It is fairly obvious that conflicting assumptions like these will lead to serious inconsistencies. If agents decide how much to consume based partly on how much they work, as economists generally agree, then the consumption function cannot be separated from the labor supply function. The same personal decisions about how much to work determine both total consumption and the total supply of labor. Conventional models, however, often treat consumption and labor as unrelated variables, which implies that agents are inconsistent or even schizoid.

The more sophisticated models nod politely to this reality by using some of the same assumptions about agents for both of these functions. Unfortunately, these models have no mechanism for making sure that the individual decisions implied by changes in the labor supply are consistent with those implied by changes in consumption. In these models, policy can cause labor supply to change independent of consumption--something which does not happen in the model's original assumptions, which cannot happen in economic theory, and which does not happen in real life. Policy, likewise, can cause other aggregates to move independently, violating the model's assumptions. This guarantees that Keynesian models will be logically inconsistent.

Aggregate behavior in Keynesian models, thus, does not correspond with individual optimizing behavior in all conditions. It is, at best, consistent with individual behavior only under some specific conditions. Simplification is of the essence of good

science, but the things Keynes has thrown away have made macro models impotent for evaluating policies.

The rational expectations school maintains that only by formulating in a coherent way the decision problem facing individuals can one begin to develop models capable of evaluating policy correctly. Because aggregate outcomes are only a sum of individual decisions, the aggregate relationships should have no independent existence as they do under the Keynesian approach.

Error #3: arbitrary measures of success. The third fundamental problem of conventional macroeconomic modelling is that it relies on arbitrary measures of policy success, such as the total unemployment rate and the rate of change in the price level. As measures of a policy's success, these indexes are, at best, ambiguous and, at worst, misleading.

In classical models or rational expectations models, where agents are assumed to be acting in their own best interests, the success of a policy can be adequately determined. Economists can be confident, for instance, that if they eliminate barriers to trade or decrease uncertainty, they have increased individual welfare. They can know this because all the agents make the decisions that are best for themselves, given their constraints, and because the agents now have fewer constraints. To simplify, opportunity is almost always good in these models. Optimizing agents will take advantage of new opportunities to make themselves better off in their own terms. Providing more opportunity is a means of increasing people's well-being.

In Keynesian models, in contrast, the success of a policy cannot be clearly determined. Because these models replace individual decisions with aggregate actions, they say nothing about individual welfare. Since these models don't consider people's well-being, the economists have to make guesses about what increases it. Generally, they guess that lower unemployment and greater output increase it. People probably do want these things, but not if the costs--in terms of inflation, lost leisure, economic

uncertainty, or anything else--outweigh the benefits. Studies with rational expectations models, in fact, have shown that the costs can easily exceed the benefits. Policies designed to reduce employment fluctuations, even if they succeed, can reduce people's economic welfare over the course of the business cycle.

To simplify again, growth is usually good in Keynesian models, regardless of what it does to individual welfare. Agents are permitted to make themselves better off only in the terms dictated by policymakers, not in their own terms. Economists who rely on these models, then, cannot be sure that they have increased people's well-being, even if their policies do what they are supposed to do.

Rational expectations: the counterrevolution. Rational expectations, in sum, avoids the errors of Keynesian economics by applying a few well-established classical principles. It corrects the Keynesian assumption of irrational expectations with the well-established assumption that agents optimize or, in other words, form the best expectations possible with the information available to them. It avoids Keynesian inconsistencies by building all its theoretical structures on the same foundation, on coherent assumptions about optimizing agents. Finally, it avoids arbitrary Keynesian goals that are only proxies for individual welfare, such as economic growth, by seeking to improve individual welfare in more direct ways.

Taken literally, of course, rational expectations is simply a procedure for economic modelling. On that score it's about as exciting as live bait. But its implications are pure dynamite: almost everything we thought we knew about macroeconomic policy isn't so. The rational expectations school endorses rational expectations per se only as one assumption. A more complete picture is that the school builds on the foundation of classical economics, including the premises that individuals optimize and that markets clear. Using classical premises, it has constructed models that exhibit the main features of business cycles, such as the correlated swings in unemployment and inflation, which the old classical theory couldn't handle. This new classical economics has found cogent

grounds for rejecting the Keynesian approach to model building, and it is working to replace it with a new and more consistent approach.

The roots of the rational expectations school were already forming in the 1960s, before the crisis in Keynesian economic theory. The literal notion of rational expectations was introduced in a landmark 1961 paper by Richard Muth, who apparently borrowed the concept from engineering literature. Muth's goal was to model expectations the same way economists model other microeconomic behavior: by assuming that agents optimize and use information efficiently when forming their expectations. He was thus able to construct a theory of expectations that was consistent with an economic theory that most economists agree on.

Muth's breakthrough, though, did not convince a significant number of economists to give up their conventional macro models. This task was not accomplished until the early 1970s, when several economists began what, in retrospect, was an all-out assault on existing macroeconomic models. The three that I am most familiar with are Robert Lucas, Thomas Sargent, and Neil Wallace. Lucas proved that a model based on classical principles could generate a correlation between inflation and employment, a correlation which previously had appeared only in conventional models. He thus showed that classical models were more broadly applicable than many economists had thought. His work stimulated Sargent and Wallace, who began to trace some of the implications of the rational expectations hypothesis. They demonstrated that existing models could not be used to evaluate or design policy.

Criticisms of the rational expectations case. It is no secret that reactions against the new classical economics have been strong. That's understandable, since the rational expectations school strongly attacks ideas many economists have spent their careers refining and denies the usefulness of the models promoted by well-established commercial interests. The most frequent criticism of the school is that its fundamental assumptions--in particular, rational expectations and equilibrium modelling--are unrealistic.

One version of this charge is that agents in rational expectations models are too smart. Of course, individuals don't always use available information efficiently, so the rational expectations assumption isn't completely realistic, but neither is the generally accepted assumption that individuals always optimize. The point is that theories can't be judged by the realism of their assumptions--superficially unrealistic assumptions can produce realistic results. The assumption that agents use information efficiently is a useful simplification precisely because it gives realistic results. The assumption that agents optimize is useful for the same reason. In fact, the assumption that agents use information efficiently is, at heart, just a logical extension of the assumption that they optimize.

Charging rational expectations with being unrealistic, therefore, doesn't bolster the case for conventional models. While models with either rational expectations or adaptive expectations have unrealistic assumptions, models with adaptive expectations have unrealistic results. These models are plainly unrealistic in more important ways--ways that deprive them of any ability to evaluate policy.

Another version of the charge against the rational expectations school is that the premise that markets are continuously clearing--or in equilibrium--is unrealistic. The alternative, of course, is that markets do not clear or are in disequilibrium. It may well be more realistic to say that some markets do not clear, but again that's not relevant. The relevant issue is what assumptions produce realistic results when used to predict the effects of policies. Existing economic models cannot predict the effects of policy, and this is in no way changed by resorting to nonclearing markets.

The rational expectations school argues that, for evaluating policy, the economy is best represented by a model that includes continuous equilibrium. Equilibrium modelling is the best strategy available because it is consistent with a useful and fruitful body of economic knowledge. It is linked to the main body of price, value, and welfare theory and is thus able to share the highly refined theorems those fields have already

developed. It appears to be able to explain unemployment and the business cycle without discarding what we know about microeconomics.

James Tobin has caricatured this desire to be consistent by commenting, "In other words, if you have lost your purse on a street at night, look for it under the lamppost." He intimates that classical theory, like a lamppost, is applicable only to one area and unable to solve our macroeconomic problems. That really underestimates the capabilities of equilibrium modelling. It is not necessary, after the new advances in classical theory, to resort to disequilibrium models in order to account for unemployment, queues, quantity rationing, or other phenomena that accompany the business cycle. There's no reason, in principle, that these phenomena can't be reproduced by equilibrium modelling--indeed, some of them already have been. Besides, disequilibrium modelling poses enormously complex problems. Efforts to solve these problems would be welcome, but the most promising strategy for devising useful models is clearly equilibrium modelling. The advice of the new classical method is that when you go out at night to look for your lost purse, go with flashlight in hand. Why grope in the dark when a light is available?

Some false charges. Another prominent criticism of rational expectations is that its predictions are valid only under constant policies. Only then, critics argue, could agents know the model well enough to foresee the results of policy. That's really turning things on their heads. Keynesian models, in fact, are the ones limited to constant policies because they do not recognize that people react to a new policy--that if people are faced with a new policy, their decision rules will change.

Rational expectations models may not have solved all of the problems inherent in Keynesian models, but they at least acknowledge that people can and do react to a new policy. Advocates of rational expectations concede that their models have not yet been able to capture fully what happens in the economy when policy changes. But the new method, because it is logically consistent and based firmly on accepted economic

principles, has a good chance of producing models that can. The conventional method in forty years has not produced one model that captures what happens when policy changes, and it is absolutely incapable of doing so. While Keynesian models can produce very good forecasts as long as policies do not change, they cannot describe how individual agents in the economy make related decisions in response to new policies, as they must if they hope to reproduce the effects of a policy change. An economy in motion is best modelled by having agents change their decisions when the available information changes. This is what rational expectations models try to accomplish--and what Keynesian models forget.

Another false charge is that rational expectations implies that monetary and fiscal policies don't have any real effects on overall employment or production. Business Week, for instance, reported: "In essence the rationalists maintain that the government is impotent in the economic sphere" (June 26, 1978). The rational expectations school makes no such claim. In fact, its proponents believe that government has a tremendous influence on economic matters--though not the influence that the Keynesians claim.

A call for a new style of policymaking. The rational expectations school has shown that no one knows much about what happens to the economy when economic policy is changed. The methods of evaluating policy that we thought would work don't--and they cannot be patched up. This means that our policies must be much different than they have been in recent years. Specifically, it means that activist macroeconomic policies--those designed to stimulate economic growth by cutting taxes, increasing government spending, increasing the money supply, or increasing the federal deficit--must be curbed.

Activist policies must be curbed, first, because a growing body of evidence, both empirical and theoretical, suggests that existing models cannot succeed in offsetting the normal fluctuations in output, employment, or other aggregates. They may be able to influence economic activity in some circumstances, but they cannot tame the business cycle.

Activist policies must be curbed, second, because most of their effects are uncertain. Although we know that they don't work the way they are supposed to, we don't know--even approximately--what they really do. Every economic theory wisely recommends that policy should be more cautious when its effects are less certain, for the obvious reason that a misconceived policy could make matters worse. Policymakers need to move more slowly, with smaller steps. They must not try to stimulate economic growth with such massive measures as they have been using, because no one can be sure what these measures will accomplish.

Activist policies must be curbed, third, because even if we knew what their results would be, we wouldn't know whether they were desirable or not. Policymakers who rely on the Keynesian method cannot let individuals in the economy choose which results are good; they are compelled to choose for them. The result is that activist policies may well be making people generally worse off, unless their preferences exactly match those specified by the policymakers.

Some critics of the new classical economics accept, at least for purposes of argument, the premise of rational expectations in macro models, but nevertheless attempt to justify activist policies. Typically, they have modelled situations in which the government knows what is happening in the business cycle better or sooner than agents. The government then exploits this advantage to fool agents into making decisions they would not make if they knew what it knew. But merely to demonstrate the potential to exploit such information does not establish that it is desirable to do so. In particular, it does not even consider whether simply making this privileged information freely available would make agents better off than tricking them. These attempts, in short, do not result in a verdict for activist policies.

Another common way to justify activist policies is to put various rigidities into a model, such as contracts that lock agents into fixed prices or wage rates over long periods regardless of policy changes or higher inflation. Under these conditions activist



policy can work, but only by playing favorites. It requires that the agents with inflexible contracts lose while others win. Even if this inherent favoritism could be excused, such policymaking would not be feasible for very long. Any repeated attempts to exploit these rigidities would soon become so expensive that agents, if they optimized, would begin to be wary of rigid contracts. They would find some way to avoid being harmed by these contracts when policy was changed--perhaps they would insist on shorter contracts or escalator clauses.

Instead of activist policies, we need stable policies. Which stable policies are the best is still a matter of debate, but a general approach can be surmised. The government should specify the rules for the economic game--that is, the policies and regulations--so that people know what opportunities are available and understand the probable consequences of their decisions. Tax policies, for example, should be set so that people can know if their relative taxes are going up or down from one year to the next. Spending policies should be announced well in advance and explained so that they don't trick people into making harmful decisions. Regulations on financial markets should be systematic and well announced instead of changing from month to month. Even the regulations pertaining to bankruptcy need to be more predictable, so that future Chrysler Corporations will know in advance what to expect.

For the consequences of the rules to be well understood, the rules must not change very often. The government, of course, would want to be able to change some policies, particularly those that are not succeeding, but it has a responsibility to see that people are not intentionally tricked by a new policy. At present, many of our most important economic policies come as surprises for one reason or another. No one will say what happens at an FOMC meeting. No one will say how much the U.S. spends to prop up the dollar. Congress changes tax laws so fast that labor contracts, wills, and investments often fail to do what people intend. Changes in policy must come more slowly. In the future, perhaps, when our economic knowledge is more sophisticated, we will be able to

design fair and well-understood rules for changing policies, but for now we must choose policies that accommodate our ignorance.

An important principle behind this new approach to policymaking is that government rules and rule changes should not be based on arbitrary indexes like the unemployment rate. Rather, they should be based on their ability to improve the general welfare. If a policy can increase efficiency or otherwise make people better off, then use it. But if all it can do is shift some aggregate numbers that may not mean much, why bother? I suspect that this approach to policymaking would lead to much less government involvement in the economy than we now have, since it is hard to demonstrate that government involvement has improved welfare. Government may still have a large role as a rule maker, but this is necessarily a passive role. The referee, after all, shouldn't intercept a pass.

Perhaps because of these tentative policy implications, the rational expectations school has sometimes been identified as a conservative branch of economics. Conservative is not an entirely accurate term for it, however. It does conserve some classical principles, but it isn't really striving to conserve anything out of a sense of nostalgia or duty to the past. With equal accuracy, in fact, the school might be called radical, for it is attempting to recultivate macroeconomics from the roots up. It might also be called liberal because of its emphasis on individual welfare, rights, and opportunities. Political labels, though, don't quite fit such an academic enterprise. The advocates of rational expectations are seeking a kind of truth, not an ideology. If they persevere and find it, as I believe they will, then the question will be not whether they are left or right, but how much their knowledge can benefit us.